



A STUDY ON TURNAROUND TIME OF ONLINE INDENTATION OF MEDICINES IN A TERTIARY CARE HOSPITAL

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ABSTRACT

*Medication turnaround time is the time it takes for the pharmacy to process a medication order. Reducing medication turnaround time is important to ensure timely availability of the drugs to the patient. **Objective:** This study measures the turnaround time for online indents of pharmacy reaching the patient wards and the factor affecting the turnaround time to take remedial actions to improve the turnaround time. **Methodology:** A Prospective observational study in the in-Patient Pharmacy Department of a tertiary care teaching hospital **Results:** delay in turnaround time was captured, factors affecting the delay was lack of sequencing in order, IT system errors, long breaks during peak hours, frequent enquiry calls, staff efficiency, lack of space were the factors affecting turnaround time*

Keywords: pharmacy, indenting time, indents

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1. INTRODUCTION

Every Healthcare facility, big or small, would like to have its very own pharmacy to meet the medicine requirements of patients. It is one of the critical areas of healthcare facility as well. ¹ Approximately 20 percent of hospital cost, i.e. more than half of the materials budget, is accounted for medicines & pharmaceutical supplies. Availability of the right drug at the required place at the time of need is the key to the healthcare facility's existence. Consequences of delays can be disastrous due to non-availability of the right drug at the right time. ² Drug-Dispensing Systems in hospitals can be collective or individualized.

1.1. Collective System

The collective system, also known as the traditional system, is the oldest and most obsolete. In this system, drug-related actions are centered on nursing professionals, and the pharmacy is merely a drug delivery agent. It is characterized by the distribution of drugs per hospital unit/service based on a request by a nurse. It implies the establishment of inventory in these units under the nurse's supervision^{3, 4}

It is estimated that nurses spend about 25% of their time transcribing prescriptions, checking inventory, filling requests, and transporting and separating drugs in the various units. Institutional costs are high due to losses by theft, inadequate storage, and drug expiration ^{4,5}. The advantages of this system are that drugs are readily available at the units, there are fewer requests to the pharmacy, with a corresponding reduction in pharmacy expenses related to human resources and materials. These advantages become obstacles for improved pharmaceutical service to patients.⁴

1.2. Individualized System

In the individualized drug-dispensing system, the pharmacy and pharmacists participate more actively on drug-use issues; however, nursing participation and error rates are still high. In this system, drugs are dispensed per patient, usually for a 24-hour treatment period. The pharmacy dispenses drugs separately per patient, according to the medical prescription, to the hospital units ^{3, 4}.

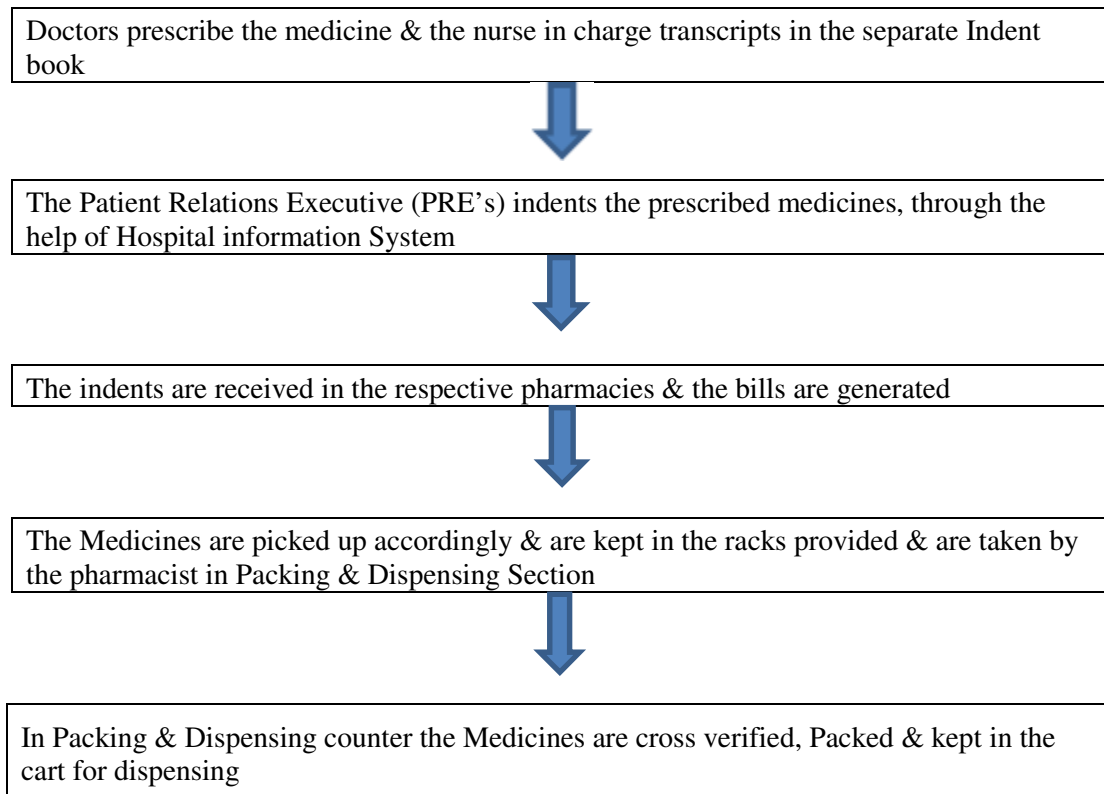
The objective of the study was to study the turn-around time of online drug indents and factors influencing the online drug indenting process.

2. METHODOLOGY

A Prospective Observational study in the In-Patient Pharmacy Department of a tertiary care teaching hospital in South India. The study was undertaken for a period of 6 months with a sample size of 463 medicine indents raised in the wards of the hospital. The data collection form was designed and validated based on the process of indenting of drugs from the wards and observations were noted down. The collected data was analyzed using MS Excel and SPSS Software version 20. Prior to the data collection, approval to conduct the study was obtained from Institutional Ethics Committee (IEC).

3. RESULTS

The process of indenting the medicines from the ward and dispensing by the hospital pharmacy is shown below.



Xaxis depicts the reprsenataton of various categories of wards (MM- male medical , OM – ortho male , SM- surgery male, S- cardiac , SF- surgery male)

Y axis depicts total waiting time for medicines to reach ward in minutes

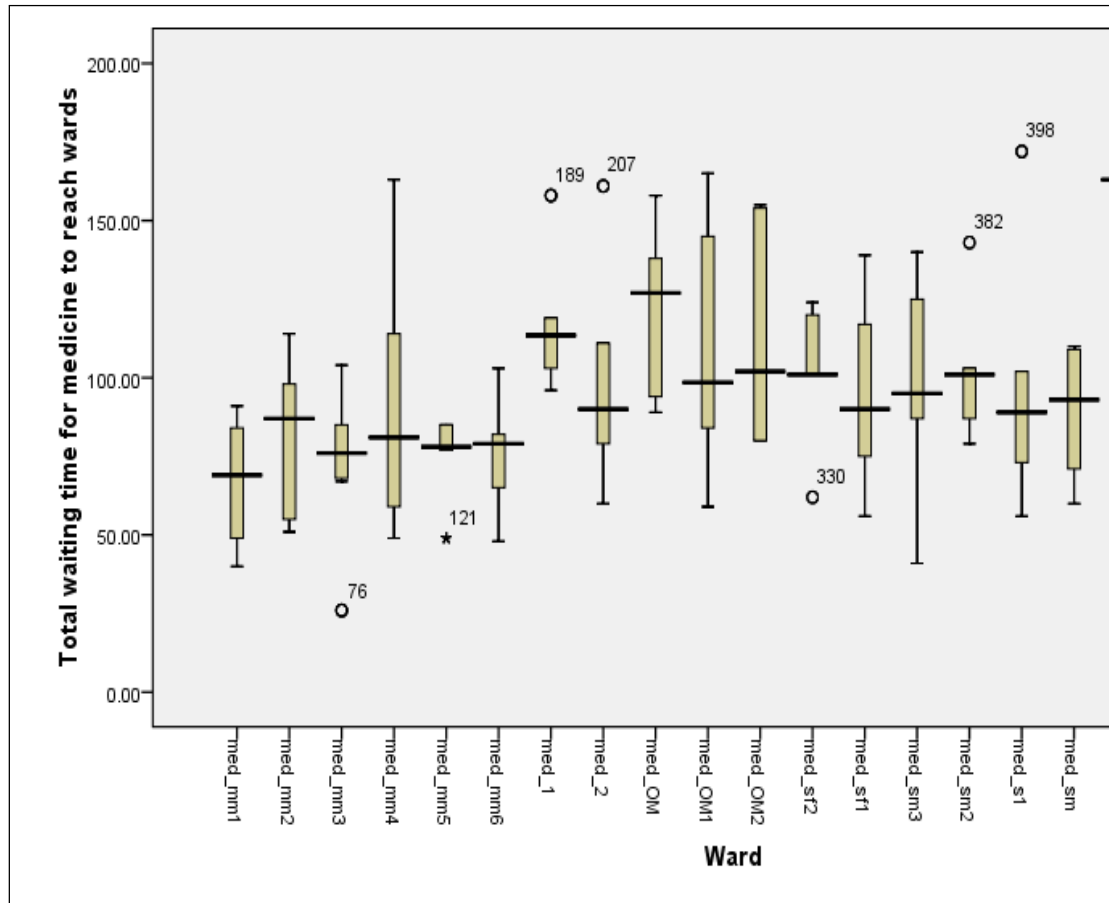


Figure 1: Total waiting time for medicine to reach wards

The Dispensing takes place in top to bottom order that is from the 3rd Floor to the 1st Floor .Hence we can see that the wards which are located in the 3rd floor has less waiting time compared to the 2nd , 1st floor. The median time Floor wise is as Follows:

1ST FLOOR	Total Waiting time for medicines to reach wards(In Minutes)	2nd floor	Total Waiting time for medicines to reach wards (In Minutes)	3rd Floor	Total Waiting time for medicines to reach wards (In Minutes)
		SM3	95		
OF2	90	SM2	101	MM4	81
OM2	102	SF1	90	MM5	72.5
OM	127	SM	93	MM6	79
OF1	113.5	S1	89	MM3	76
OM1	98.5			MM2	87
SF2	101			MM	69
	101.5		93		77.5

Figure 2: The Distribution of medicines according to wards

(MM- male medical , OM – ortho male , SM- surgery male, S- cardiac , SF- surgery male)

Total waiting time for medicines to reach ward in minutes

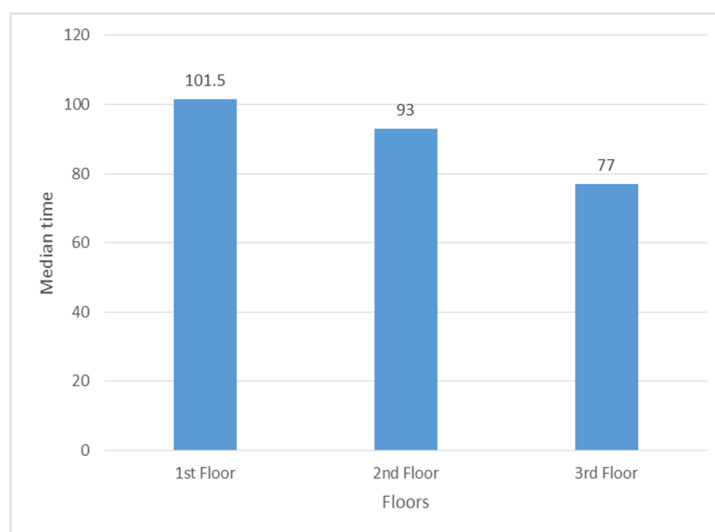


Figure 3: Median distribution time (in Minutes) _ for medicines floor wise

Factors affecting Turnaround Time:

The major factors that influences the process of online indenting process which has an effect on turnaround time of dispensing of medicines to the wards are:

1) Sequen4.cing in Order: The First in first out principle was not followed while picking up the bill as well as while packaging the indents .The pharmacist's while packing of the drugs would pick up the trays of indents that were closer to his hands and the other indent trays would be just lying on the rack which causes a delay. The indent which is kept on the table 1st must be picked

up 1st and packed. The sequential order must be followed which adds to the delay of dispensing of the drugs. There is a lack of co-ordination among the pharmacy associates and pharmacist's

2) The efficiency of the associates and packaging staffs: distractions and disruptions in conversations while the picking and packaging of the particular indent resulted in slowing the process and resulting in delays.

3) Waiting For the dispensing trolley to get filled: Only when the dispensing in trolleys are filled the medicines are dispensed to the wards. Half fill trolleys are were never taken for distribution as a result the indents which are already packed and kept faced delay in delivery

The other Factors which plausibly causes delay in dispensing include:

1) Frequent enquiry calls to the pharmacy from wards on not receiving the drugs on time and hence disrupting the work process in in-patient pharmacy.

2) The long breaks for lunch which most the workers do not come on time which in turn gives an opportunity for queuing in the indents.

3) System Errors Due to the Adoption of new HIS which the staffs are not yet adjusted with

4) The space in the in-Patient Pharmacy as well as the structure of the of hospital also could be taken into consideration.

4. DISCUSSION

According to The Indian Pharmaceutical Association Good Pharmacy Practice Guidelines Documentation Committee They tell that Conscious efforts should be made to ensure that the patients' waiting time is kept at minimum, while all the necessary steps are carried out systematically [9].

As observed while conducting the study them, Median time for third floor is 77 minutes, second floor 93 minutes and first floor is 101 minutes.

Ideally, the dispensing of drugs must be done within 30 minutes irrespective of the wards or floor it has to be dispensed in. The Factors that influence in the delay can be minimized by having a staff who would visit ward every 15 minutes and dispense the required medicines.

In the month of April 2017 the turnaround time was increased by 2 hrs., because nurses had to check all the received indented medicines and enter it in a documentation book and sign it and this was done after the nurses completed their core nursing activities and hence the delay and this was usually done after the nurses completed their core nursing activities and hence the delay. The house keeping staff had to wait for 15 to 10 minutes at each of the wards hence increasing the turn-around time.

5. RECOMMENDATIONS

1. Dedicated staff members who would dispense the packed medicines for every 15 minutes or 20 minutes so as to reduce the time for the already packed drugs Instead of Waiting for the trolley to be filled.

2. Training for the associates and the pharmacist to pack the drugs and keep the drugs on the rack in streamlined order through a systematic training process through a well-developed module

3. Strict monitoring by the In-charge of the In-Patient Pharmacy so that there is no work place deviance while working hours to avoid disruptions and interactions

4. Robust IT system to manage the system functioning smoothly

6. CONCLUSION

From this study we observe that though we adopt technology there are issues and still a delay. As much as the medication errors or dispensing errors are important similarly the delay in the

dispensing of the medicine from the pharmacy to the wards is very vital .This study acts as an additional layer to the various other delays that are occurring in the pharmacy. Patient safety is ensured when every step of the process, from choosing the most appropriate medication, to writing the prescription, to dispensing the medication is optimized to prevent delays in therapy and medication errors. Ultimately, it is most important that effective communication takes place to ensure accurate prescriptions and optimal patient care. The results of this research study have organizational applications. On an organizational level, the results of this study can be used to reduce the dispensing time by the recommendations given .Also, from this study, we are able to obtain information about ordering practices and information could be quite useful for training requirement within the departments and organization. But more important, the results of this study will benefit in improving TAT and patient care.

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